MERGER AND ACQUISITION: A BIBLIOMETRICS ANALYSIS USING R-TOOL

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ABSTRACT
Due to the competitive world, merger and acquisition activities are increased to synergies their business, reducing competition, increasing profitability, and for better technology. For tracking the published literature on the topic. For studying, three keywords were used. The main objective of this paper was to consolidate the state-of-the-art research on mergers and acquisitions through a bibliometrics study of articles published from 1997 to 2023 and to analyze the perspective of growing trends in the field. A total of 1079 scholarly documents were published in 634 journals, a significant number of institutions from developing and developed countries. For graphical representations, vosviewer and biblioshiny were used. For analysis, most used keywords, top published authors, top published countries, and most articles published in top 10 journals.

Keywords:
Merger and acquisition, Indian banking industry, Efficiency

INTRODUCTION
There has been an increase in the number and size of merger and acquisition transactions in all sectors of the economy, specifically the financial service sector. Mergers and acquisitions have become a common business expansion process in the last few decades, and there has been increasing research identifying the effect of different factors on the post-M&A integration process(chhikara. R. et.al, 2017). These companies may seek M&A to obtain synergies and efficiency gains to face the ever-increasing competitive pressure. Three types of business combinations are merger, acquisition, and consolidation. When two companies combine, they form a new company and often adopt a new name. The phrase "merger of equals" is occasionally used to describe these deals when the merging firms are of comparable size and prominence. However, in an acquisition, one corporation purchases another, usually smaller, company to incorporate into its operations or operate as a separate subsidiary.

Due to extensive research in the field of merger and acquisition in the Indian banking industry. We suppose there is a need to synthesize the research conducted in the field and identify the study subject and significant concerns. To address the need, we used bibliometric analysis, which examines the overall number of papers, highlighting the topic's essential development and suggesting potential research directions in the still-emerging area of knowledge.

REVIEW OF LITERATURE
In general, we call merger and acquisition key to reduce competition, improving synergies, and increasing banks' profitability. From the review of literature, we studied the analyses of trends of merger and acquisition in the banking industry as well as the main reason behind the merger and acquisition of banks and investigated the wealth implications of banks after the merger. Is there any relationship between M&A and net profit margins (Chaluvadi et al., 2018)(Malyadri & Sirisha, 2015). Furthermore, it studied the impact of mergers and acquisitions on bank development (Sharma et al., 2013). Tools used for the study were t-value, p-value, standard deviation, mean, and Regression analysis was used to check the contribution level of different variables in the bank profitability, and the DEA model was used to check the post-merger performance of the bank(Naga & Tabassum, 2013)(Ataullah & Le, 2006). It is found that the bank involved in the merger have improved their performance somewhat. The resulting banks have achieved the required target set for the merger(Naga

& Tabassum, 2013). Bank mergers can increase value by reducing cost or increasing revenue. Shareholders' earnings decreased, but the firm's value went up after the merger of all associations, and some factors such as profitability, size assets management, and solvency showed significant change after the merger. It also concluded that through mergers and acquisitions, banks reduced their cost and improved efficiency(Suneetha et al., 2016)(Lai, 2015). Also, some researchers suggested some vital elements of the merger, such as price, the objective of the merger, partners, and timing of the merger, were essential elements for a successful merger(Thelisson, 2022)

Research Methodology
The academic and general public communities will both gain from the bibliometric analysis. It enables us to transform published metadata into maps or visualizations, which makes it simpler to derive essential insights using keywords to visually depict research themes or clusters in a specific author affiliation of a particular journal, a discipline, and worldwide cooperation, as well as a component of a system for recognizing emergent technologies(Nugroho & Hamsal, 2021). For the analysis, the Scopus database was used because the Scopus database is one of the largest databases from where we can collect data. One thousand seventy-nine articles were found by searching on Scopus by searching advance query (merger AND acquisition AND Indian AND banking AND industry AND efficiency AND (EXCLUDE (LANGUAGE, "Portuguese") OR EXCLUDE (LANGUAGE, "Chinese") OR EXCLUDE (LANGUAGE, "French") OR EXCLUDE (LANGUAGE, "Malay") OR EXCLUDE (LANGUAGE, "Polish") OR EXCLUDE (LANGUAGE, "Spanish")) AND (EXCLUDE (PUBSTAGE, "article in press")) AND (EXCLUDE (SRCTYPE, "conference proceeding")), for bibliometric analysis records were finalized by three steps which was identification, screening and eligibility criteria. At the identification stage, the researcher found 1079 articles. At the screening stage, inclusion-exclusion standards apply. The article excluded filter was applied to articles in press and conference preceding were excluded, which was 52 in number. Only English-language papers were included. At the eligibility stage, articles highly relevant for bibliometric analysis were included, using 1020 articles for the study. The result was documented in the form of (.csv).

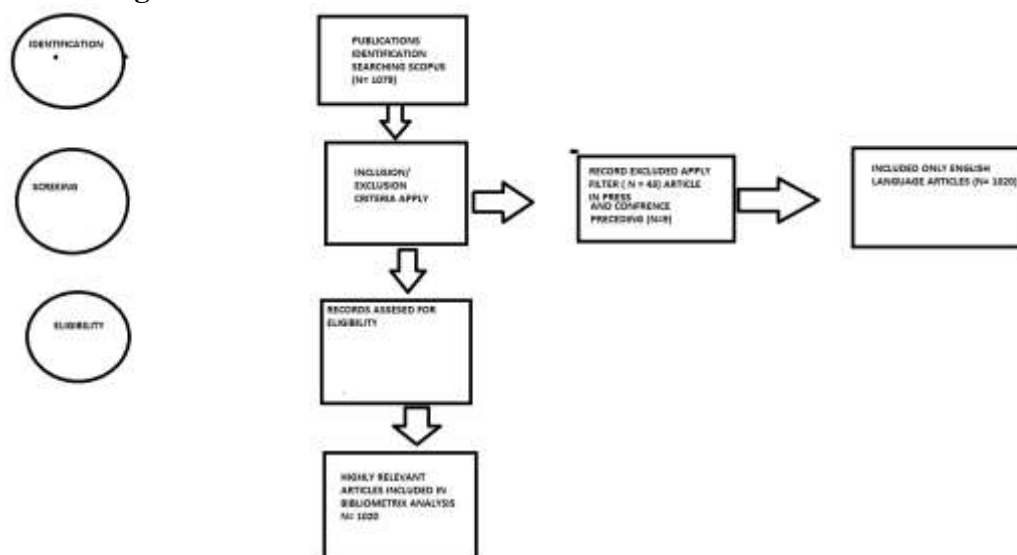**Figure1. "A Four Phases Flow Chart of Data Extraction And Filtration"**

FIG: A FOUR PHASES FLOW CHART OF DATA EXTRACTION AND FILTRATION PROCESS

DATA ANALYSIS

This section presents the result of the bibliometric analysis of merger and acquisition in the Indian banking industry. After screening each record, there were 1020 records of articles, review papers, book chapters, and conference papers. Only English-language articles were included. It was found that these articles were published in 614 journals and 2218 authors, which were affiliated with 948 institutions based in 69 counties.

Annual productions over the year

The research protocols yielded a total of 1020 publications. The temporal analysis in Table 1 and Figure 1 shows that merger and acquisition has seen immense growth since 2013, with 45 publications. The result indicates that in 2023, it has a maximum publication of 113. The possible reason behind the rapid increase in mergers and acquisitions publications is the increase in merger and acquisition trends. Many changes in the business environment, such as globalization, liberalization, and privatization, lead to increased competition(Chiaramonte et al., 2023). To compete with their rivals, businesses use methods that improve business performance, increase profitability, and synergies the business.

Table1. "Annual Productions of Articles"

Year	Articles	MeanTCperYear
1997	2	35.85
1999	1	26.68
2000	2	3.56
2001	2	43.72
2003	7	4.07
2004	4	2.71
2005	8	10.86
2006	9	2.30
2007	13	6.60
2008	14	2.60
2009	21	7.94
2010	37	8.65
2011	23	2.85
2012	29	1.82
2013	45	4.95
2014	40	2.45
2015	39	1.95
2016	49	3.72
2017	69	3.45
2018	75	2.83
2019	82	2.89
2020	102	3.68
2021	106	2.88
2022	128	1.99
2023	113	7.08

Figure 1. Growth in Annual Production of Articles
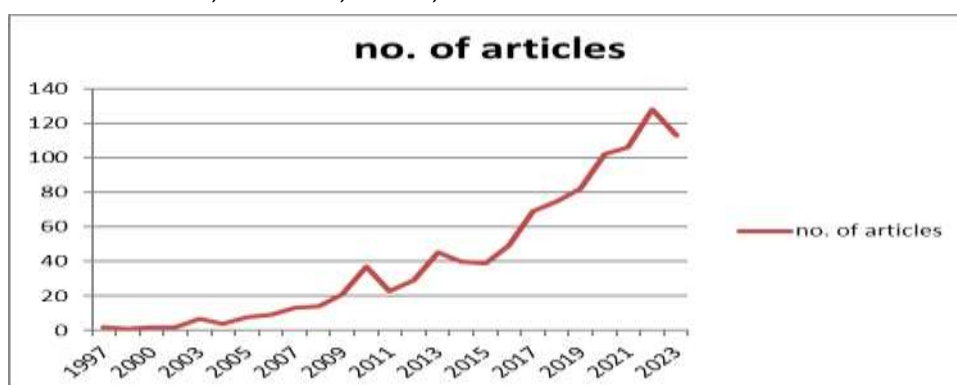
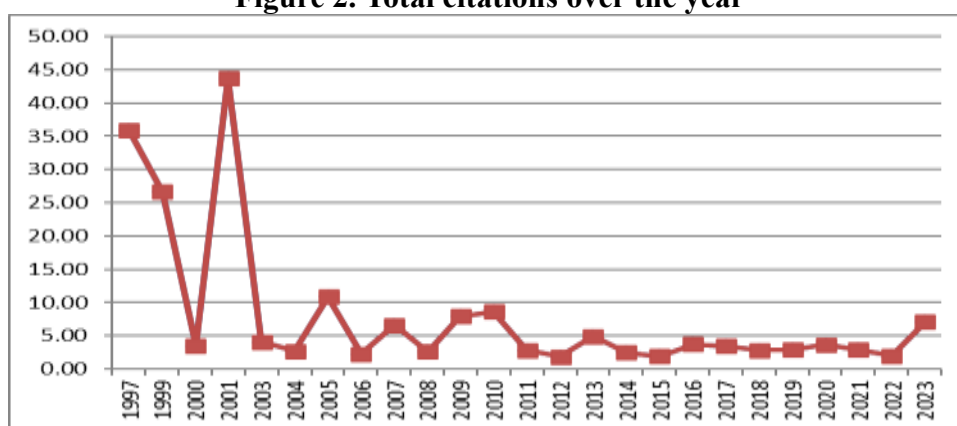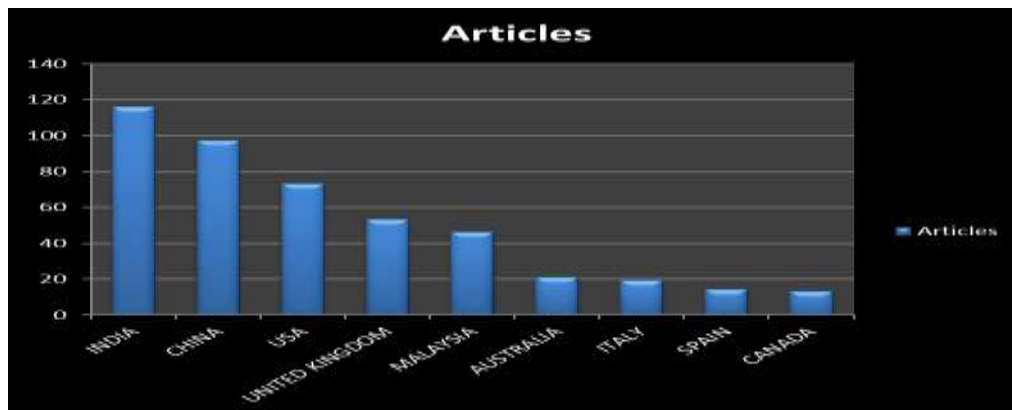**Figure 2. Total citations over the year**

Table2. The Top 10 Most Productive Countries

| Country	Articles	No. of citation
INDIA	116	857
CHINA	97	1183
USA	73	5147
UNITED KINGDOM	53	2027
MALAYSIA	46	1009
AUSTRALIA	21	628
ITALY	19	385
SPAIN	14	126
CANADA	13	857

Figure 3. Top Ten Most Productive Countries

Keywords Occurrence Analysis

Keyword occurrence analysis is performed to identify how frequently keywords have been used in published papers on mergers and acquisitions. Table 5 presents all the merger and acquisition keywords that appear five times or more in the Scopus database during the 26 years from 1997 to 2023. For future investigation, keyword occurrence network analysis was performed. The VOSveiwer software presented a map based on text-mining, where the relationship between the keywords is calculated through the distance between different terms. The shortest distance between two keywords showed that these keywords were used more times in the same papers. A total of 156 keywords were used in mergers and acquisitions, with a total occurrence of 1915 among the keywords used in publications on mergers and acquisitions. Data Envelopment analysis is in first place with 95 times occurrences, and 311 was total link strength. Efficiency was on second rank with 79 times used in studies, and total link strengths were 236, followed by merger and acquisition with occurrences of 62 studies and total link strength was 157.

Figure 5. Keywords Occurrence Analysis
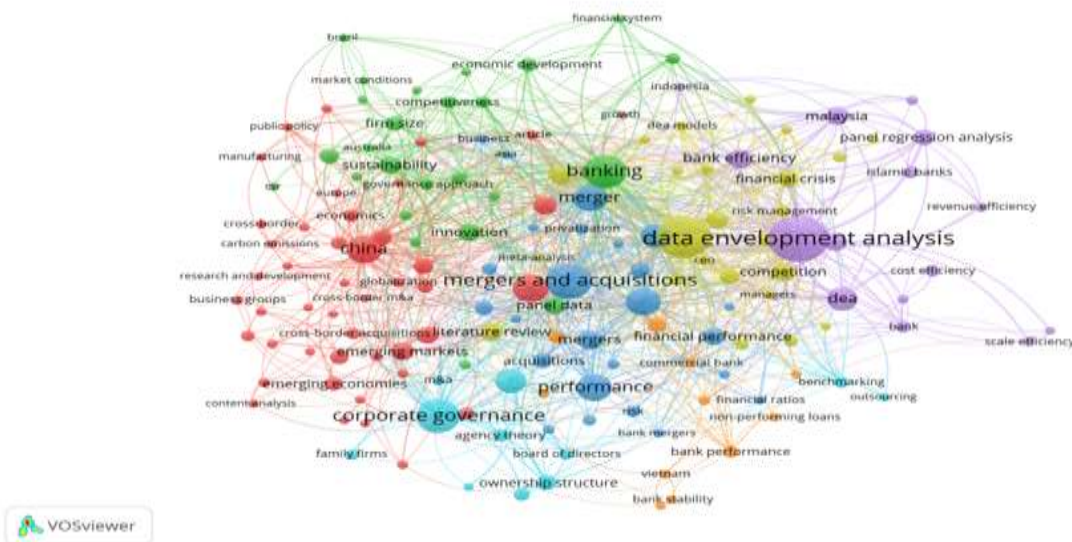
THE MOST CITED PUBLICATIONS

The research on mergers and acquisitions has seen significant changes during the last decades. This is because of ever-increasing mergers and acquisitions of organizations for reducing competition, improving strength, increasing profitability, and synergies purpose. That is why a lot of research was done on this topic. The first publication on merger and acquisition was found in the Scopus database,

published in 1997. To find out the most important study on mergers and acquisitions, we drew a list of the most cited research papers. The quality and credibility of a published paper are usually judged by the citation it receives. Literature advocates that the number of citations reflects a paper's significance in the field. Table 5. For this purpose, we selected the top 10 most cited articles BERGER AN, 1997 EURJ received the maximum number of citations, which was 1931. This paper integrates the literature on mergers and acquisitions. The second most cited paper was MEGSISON WL, 2001, J ECON LIT, which received 1822 citations.

THE MOST PRODUCTIVE AUTHOR ON MERGER AND ACQUISITION
We offer Figure 3, which shows the top 10 authors who published the maximum number of articles on the topic of merger and acquisition and who published the maximum article, of which SUFIAN F. tops the list with 30 publications, followed by KAMARUDIN F. AND WANKEP with 16 and 13 publication each.
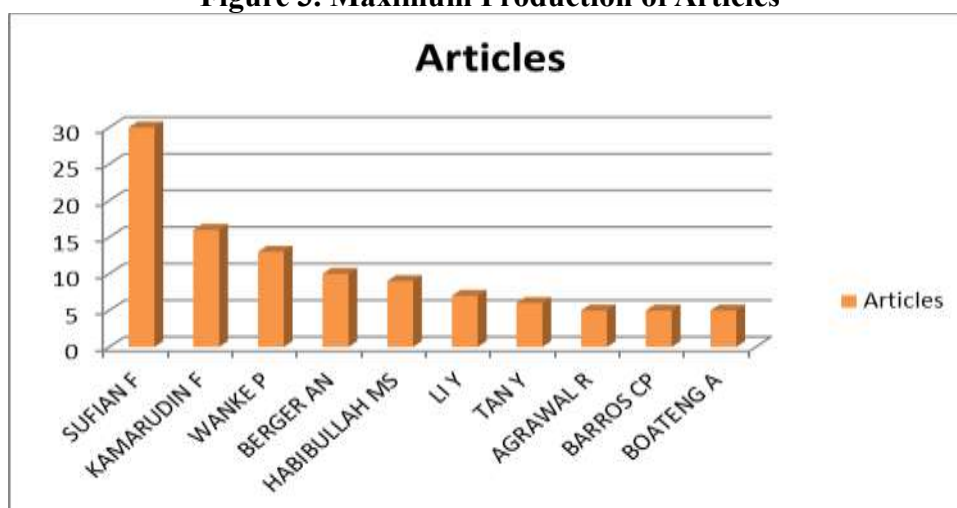
Figure 3. Maximum Production of Articles

Table:3 Top Ten Most Cited Paper

| Rank	Title	Author	Year of publication	Journal	Total Citations
1	Efficiency of financial institutions: International survey and directions for future research	Allen N. Berger	2001	EUROPEAN JOURNAL OF OPERATIONAL RESEARCH	1931
2	From State to Market: A Survey of Empirical Studies on Privatization	William L. Megginson and Jeffy M. Netter	1997	Journal of Economic Literature	1822
3	Stakeholder theory: the state of the art	BL Parmar, RE Freeman, and JS Harrison	2010	EUROPEAN JOURNAL OF OPERATIONAL RESEARCH	1821

4	CORPORATE GOVERNANCE, ECONOMIC ENTRENCHMENT AND GROWTH	R. Morck, Dwolfenzon and B yeung	2005	Journal of Economic Literature	971
5	The Economics of Entrepreneurship: what we do and what we don't	Simon C. Parker	2005	Foundation and Trends in Entrepreneurship	838
6	Business Groups in Emerging Markets: Paragons or Parasites?	Tarun Khanna and Yishay Yafeh	2007	Journal of Economics Literature	834
7	The theory of corporate finance	J. Tirole	2010	Princeton University Press	815
8	The consolidation of the financial services industry: Causes, consequences, and implications for the future	AN. Berger, RS Demsetz and PE Strahan	1999	Journal of Banking and Finance	667
9	Organizational learning creating, retaining, and transferring knowledge	L Argete	2012	Springer Science and Business Journal	627
10	Corporate governance in emerging market	Sclaessens and BB Yurtoglu	2013	Emerging Market Review	532

CO-CITATION ANALYSIS
The co-citation analysis of these top authors is an intriguing element of the bibliometric study. When two or more papers are cited together in a third paper, it is known as co-citation(Farrukh et al., 2022). The figure shows a cluster of co-citations of the authors with eight different colors. The red colors show the connection of authors with their publications, and other colors also show the same. The co-citation cluster showed the trends and scope of publication in mergers and acquisitions.
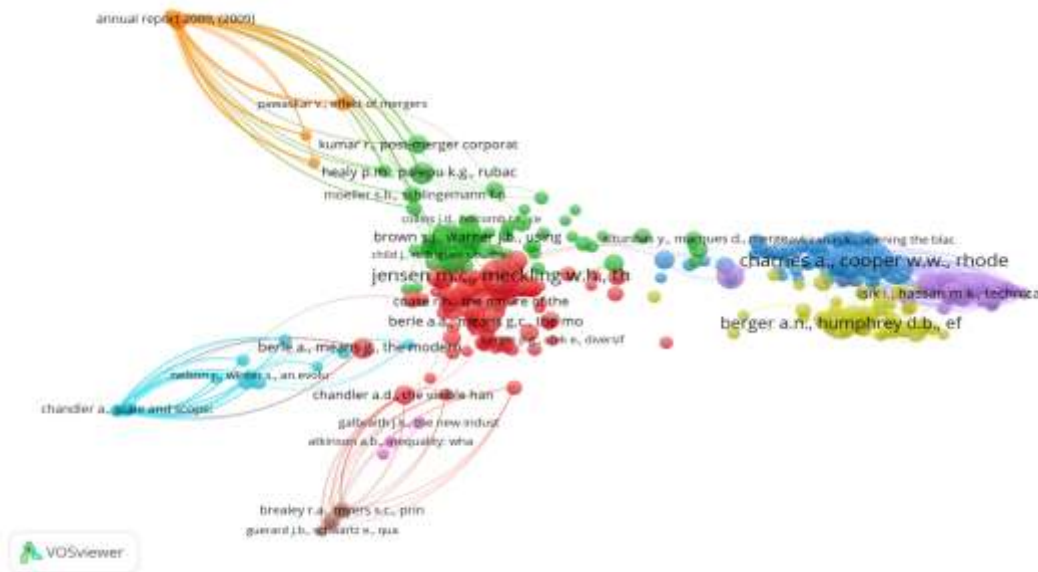
Conclusion

The study results show that the total number of publications from the top 10 most productive countries accounted for 44.31% of the total production used for the study. These findings reflect that some countries are highly involved in activities of merger and acquisition. The growing mergers and acquisitions activities in the Indian banking industry have increased academics' interest. The number of published articles has increased over the years, with a sharp increase in the last decades.

The overall conclusion that we reached based on bibliometric analysis enabled us to gain more in-depth insights into the merger and acquisition in the Indian banking industry. The topic development of merger and acquisition identifies the primary sources from which research papers were published. The most cited journals where the research is published. The top active author, the most cited author in the field, and the main topic of interest is merger and acquisition in the Indian banking industry. The author points out several essential points regarding research on mergers and acquisitions in the Indian banking industry from 1997 to 2023. The number of publications has been increasing throughout the years. The maximum number of publications in the year 2023.

As we know, technology is changing day by day, and competition is also increasing. From this study, we found synergies in the bank to reduce competition, increase profitability, and reduce cost activity of merger and acquisition has performed. Through research on the topic and analysis of works listed in the previous section, it is possible to identify which authors are more active and can use their references when the subject is to be researched. This study also suggested that different bibliometrics analysis techniques were employed from different databases.

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